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<110> Jensen, Jens Stougaard
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Radutoiu, Elena Simona
Madsen, Esben Bjorn
Sandel, Niels Norgaard

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Val	Tyr	Tyr	Ala	Glu	Leu	Arg	Gly	Lys	Lys	Thr	Ala	Ile	Lys	Lys	Met				
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Asp	Val	Gln	Ala	Ser	Thr	Glu	Phe	Leu	Cys	Glu	Leu	Lys	Val	Leu	Thr				
		355					360					365							
His	Val	His	His	Leu	Asn	Leu	Val	Arg	Leu	Ile	Gly	Tyr	Cys	Val	Glu				
	370					375					380								
Gly	Ser	Leu	Phe	Leu	Val	Tyr	Glu	His	Ile	Asp	Asn	Gly	Asn	Leu	Gly				
385					390					395					400				
Gln	Tyr	Leu	His	Gly	Ser	Gly	Lys	Glu	Pro	Leu	Pro	Trp	Ser	Ser	Arg				

<400> 25

Met Lys Leu Lys Thr Gly Leu Leu Leu Phe Phe Ile Leu Leu Leu Gly
1 5 10 15

His Val Cys Phe His Val Glu Ser Asn Cys Leu Lys Gly Cys Asp Leu
20 25 30

Ala Leu Ala Ser Tyr Tyr Ile Leu Pro Gly Val Phe Ile Leu Gln Asn
35 40 45

Ile Thr Thr Phe Met Gln Ser Glu Ile Val Ser Ser Asn Asp Ala Ile
50 55 60

Thr Ser Tyr Asn Lys Asp Lys Ile Leu Asn Asp Ile Asn Ile Gln Ser
65 70 75 80

Phe Gln Arg Leu Asn Ile Pro Phe Pro Cys Asp Cys Ile Gly Gly Glu
85 90 95

Phe Leu Gly His Val Phe Glu Tyr Ser Ala Ser Lys Gly Asp Thr Tyr
100 105 110

Glu Thr Ile Ala Asn Leu Tyr Tyr Ala Asn Leu Thr Thr Val Asp Leu
115 120 125

Leu Lys Arg Phe Asn Ser Tyr Asp Pro Lys Asn Ile Pro Val Asn Ala
130 135 140

Lys Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Val Ser
145 150 155 160

Lys Asp Tyr Gly Leu Phe Ile Thr Tyr Pro Ile Arg Pro Gly Asp Thr
165 170 175

Leu Gln Asp Ile Ala Asn Gln Ser Ser Leu Asp Ala Gly Leu Ile Gln
180 185 190

Ser Phe Asn Pro Ser Val Asn Phe Ser Lys Asp Ser Gly Ile Ala Phe
195 200 205

Ile Pro Gly Arg Tyr Lys Asn Gly Val Tyr Val Pro Leu Tyr His Arg
210 215 220

Thr Ala Gly Leu Ala Ser Gly Ala Ala Val Gly Ile Ser Ile Ala Gly
225 230 235 240

Thr Phe Val Leu Leu Leu Leu Ala Phe Cys Met Tyr Val Arg Tyr Gln
 245 250 255
 Lys Lys Glu Glu Glu Lys Ala Lys Leu Pro Thr Asp Ile Ser Met Ala
 260 265 270
 Leu Ser Thr Gln Asp Ala Gly Asn Ser Ser Ser Ala Glu Tyr Glu Thr
 275 280 285
 Ser Gly Ser Ser Gly Pro Gly Thr Ala Ser Ala Thr Gly Leu Thr Ser
 290 295 300
 Ile Met Val Ala Lys Ser Met Glu Phe Ser Tyr Gln Glu Leu Ala Lys
 305 310 315 320
 Ala Thr Asn Asn Phe Ser Leu Asp Asn Lys Ile Gly Gln Gly Gly Phe
 325 330 335
 Gly Ala Val Tyr Tyr Ala Glu Leu Arg Gly Lys Lys Thr Ala Ile Lys
 340 345 350
 Lys Met Asp Val Gln Ala Ser Thr Glu Phe Leu Cys Glu Leu Lys Val
 355 360 365
 Leu Thr His Val His His Leu Asn Leu Val Arg Leu Ile Gly Tyr Cys
 370 375 380
 Val Glu Gly Ser Leu Phe Leu Val Tyr Glu His Ile Asp Asn Gly Asn
 385 390 395 400
 Leu Gly Gln Tyr Leu His Gly Ser Gly Lys Glu Pro Leu Pro Trp Ser
 405 410 415
 Ser Arg Val Gln Ile Ala Leu Asp Ala Ala Arg Gly Leu Glu Tyr Ile
 420 425 430
 His Glu His Thr Val Pro Val Tyr Ile His Arg Asp Val Lys Ser Ala
 435 440 445
 Asn Ile Leu Ile Asp Lys Asn Leu Arg Gly Lys Val Ala Asp Phe Gly
 450 455 460
 Leu Thr Lys Leu Ile Glu Val Gly Asn Ser Thr Leu Gln Thr Arg Leu
 465 470 475 480

Val Gly Thr Phe Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly Asp
485 490 495

Ile Ser Pro Lys Ile Asp Val Tyr Ala Phe Gly Val Val Leu Phe Glu
500 505 510

Leu Ile Ser Ala Lys Asn Ala Val Leu Lys Thr Gly Glu Leu Val Ala
515 520 525

Glu Ser Lys Gly Leu Val Ala Leu Phe Glu Glu Ala Leu Asn Lys Ser
530 535 540

Asp Pro Cys Asp Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Gly Glu
545 550 555 560

Asn Tyr Pro Ile Asp Ser Val Leu Lys Ile Ala Gln Leu Gly Arg Ala
565 570 575

Cys Thr Arg Asp Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val
580 585 590

Val Ala Leu Met Thr Leu Ser Ser Leu Thr Glu Asp Cys Asp Asp Glu
595 600 605

Ser Ser Tyr Glu Ser Gln Thr Leu Ile Asn Leu Leu Ser Val Arg
610 615 620

<210> 26
<211> 19
<212> DNA
<213> Lotus japonicus

<400> 26
aatgctcttg atcaggctg 19

<210> 27
<211> 20
<212> DNA
<213> Lotus japonicus

<400> 27
aggagcccaa gtgagtgcta 20

<210> 28
<211> 20
<212> DNA
<213> Lotus japonicus

<400> 28
caggaaaaac caccacctgt 20

<210> 29
<211> 21
<212> DNA
<213> Lotus japonicus

<400> 29
atggaggcga atacactggt g 21

<210> 30
<211> 1853
<212> DNA
<213> Lotus filicaulis

<400> 30
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tcttacctct ggctctctga gtctttttct tgcactcacg ttgcttttca ctaacatcgc 120
cgctcgatca gaacagatca gcggcccaga cttttcatgc cctgttgact cacctccttc 180
ttgtgaaaca tatgtgacat acacagctca gtctccaaat cttctgagcc tgacaaacat 240
atctgatata ttgatataca gtccctttgtc cattgcaaga gccagtaaca tagatgcagg 300
gaaggacaag ctggttccag gccaaagtctt actggtacct gtaacttgcg gttgcgcggg 360
aaaccactct tctgccaata cctcctacca aatccagaaa ggtgatagct acgactttgt 420
tgcaaccact ttatatgaga accttacaaa ttggaatata gtacaagctt caaaccagg 480
ggtaaatacca tatttggtgc cagagcgcgt caaagtcgta ttccctttat tctgcagggtg 540
cccttcaaag aaccagttga acaaagggat tcagtatctg attacttatg tgtggaagcc 600
caatgacaat gtttcccttg tgagtgccaa gtttggtgca tccccagcgg acatattgac 660
tgaaaaccgc tacggtcaag acttcaactgc tgcaaccaac cttccaattt tgatcccagt 720
gacacagttg ccaaagctta ctcaaccttc ttcaaagtga aggaaaagca gcattcatct 780
tctggttata cttggtatta ccctgggatg cacgttgcta actgcagttt taaccgggac 840
cctcgatatat gtatactgcc gcagaaagaa ggctctgaat aggactgctt catcagctga 900
gactgctgat aaactacttt ctggagtttc aggctatgta agcaagccaa acgtgtatga 960
aatcgacgag ataatggaag ctacgaagga tttcagcgat gagtgcagg ttggggaatc 1020
agtgtacaag gccaacatag aaggtcgggt tgtagcggta aagaaaatca aggaagggtgg 1080
tgccaatgag gaactgaaaa ttctgcagaa ggtaaatacat ggaaatctgg tgaaactaat 1140
gggtgtctcc tcaggctatg atggaaactg tttcttggtt tatgaatatg ctgaaaatgg 1200

gtctcttgct gagggtgtg tctccaagtc ttcaggaacc ccaaactccc ttacatggtc 1260
 tcaaaggata agcatagcag tggatgttgc tgtgggtctg caatacatgc atgaacatac 1320
 ctatccaaga ataatacaca gggacatcac aacaagtaat atccttctcg actcgacctt 1380
 caaggccaag atagcaaatt tcgcatggc cagaacttcg accaacccca tgatgccaaa 1440
 aatcgatgtc ttcgctttcg ggggtgcttct gatagagttg ctcaccggaa ggaaagccat 1500
 gacaaccaag gagaacggcg aggtgggttat gctgtggaag gatatgtggg agatctttga 1560
 catagaagag aatagagagg agaggatcag aaaatggatg gacctaatt tagagagctt 1620
 ttatcatata gataatgctc tcagcttggc atccttagca gtgaattgca cagctgataa 1680
 gtctttgtct cgaccctcca tggctgaaat tgttcttagc ctctcctttc tcaactcaaca 1740
 atcatctaac cccacattag agagatcctt gacttcttct ggggttagatg tagaagatga 1800
 tgctcatatt gtcacttcca ttacagcacg ttaagcaagg gaaggtaatt cag 1853

<210> 31
 <211> 595
 <212> PRT
 <213> Lotus filicaulis

<400> 31

Met Ala Val Phe Phe Leu Thr Ser Gly Ser Leu Ser Leu Phe Leu Ala
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Leu Thr Leu Leu Phe Thr Asn Ile Ala Ala Arg Ser Glu Gln Ile Ser
 20 25 30

Gly Pro Asp Phe Ser Cys Pro Val Asp Ser Pro Pro Ser Cys Glu Thr
 35 40 45

Tyr Val Thr Tyr Thr Ala Gln Ser Pro Asn Leu Leu Ser Leu Thr Asn
 50 55 60

Ile Ser Asp Ile Phe Asp Ile Ser Pro Leu Ser Ile Ala Arg Ala Ser
 65 70 75 80

Asn Ile Asp Ala Gly Lys Asp Lys Leu Val Pro Gly Gln Val Leu Leu
 85 90 95

Val Pro Val Thr Cys Gly Cys Ala Gly Asn His Ser Ser Ala Asn Thr
 100 105 110

Ser Tyr Gln Ile Gln Lys Gly Asp Ser Tyr Asp Phe Val Ala Thr Thr
 115 120 125

Leu Tyr Glu Asn Leu Thr Asn Trp Asn Ile Val Gln Ala Ser Asn Pro
 130 135 140

Gly Val Asn Pro Tyr Leu Leu Pro Glu Arg Val Lys Val Val Phe Pro
 145 150 155 160

Leu Phe Cys Arg Cys Pro Ser Lys Asn Gln Leu Asn Lys Gly Ile Gln
 165 170 175

Tyr Leu Ile Thr Tyr Val Trp Lys Pro Asn Asp Asn Val Ser Leu Val
 180 185 190

Ser Ala Lys Phe Gly Ala Ser Pro Ala Asp Ile Leu Thr Glu Asn Arg
 195 200 205

Tyr Gly Gln Asp Phe Thr Ala Ala Thr Asn Leu Pro Ile Leu Ile Pro
 210 215 220

Val Thr Gln Leu Pro Lys Leu Thr Gln Pro Ser Ser Asn Gly Arg Lys
 225 230 235 240

Ser Ser Ile His Leu Leu Val Ile Leu Gly Ile Thr Leu Gly Cys Thr
 245 250 255

Leu Leu Thr Ala Val Leu Thr Gly Thr Leu Val Tyr Val Tyr Cys Arg
 260 265 270

Arg Lys Lys Ala Leu Asn Arg Thr Ala Ser Ser Ala Glu Thr Ala Asp
 275 280 285

Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys Pro Asn Val Tyr
 290 295 300

Glu Ile Asp Glu Ile Met Glu Ala Thr Lys Asp Phe Ser Asp Glu Cys
 305 310 315 320

Lys Val Gly Glu Ser Val Tyr Lys Ala Asn Ile Glu Gly Arg Val Val
 325 330 335

Ala Val Lys Lys Ile Lys Glu Gly Gly Ala Asn Glu Glu Leu Lys Ile
 340 345 350

Leu Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val Ser
 355 360 365

Ser Gly Tyr Asp Gly Asn Cys Phe Leu Val Tyr Glu Tyr Ala Glu Asn
 370 375 380

Gly Ser Leu Ala Glu Trp Leu Phe Ser Lys Ser Ser Gly Thr Pro Asn
 385 390 395 400

Ser Leu Thr Trp Ser Gln Arg Ile Ser Ile Ala Val Asp Val Ala Val
 405 410 415

Gly Leu Gln Tyr Met His Glu His Thr Tyr Pro Arg Ile Ile His Arg
 420 425 430

Asp Ile Thr Thr Ser Asn Ile Leu Leu Asp Ser Thr Phe Lys Ala Lys
 435 440 445

Ile Ala Asn Phe Ala Met Ala Arg Thr Ser Thr Asn Pro Met Met Pro
 450 455 460

Lys Ile Asp Val Phe Ala Phe Gly Val Leu Leu Ile Glu Leu Leu Thr
 465 470 475 480

Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly Glu Val Val Met Leu
 485 490 495

Trp Lys Asp Met Trp Glu Ile Phe Asp Ile Glu Glu Asn Arg Glu Glu
 500 505 510

Arg Ile Arg Lys Trp Met Asp Pro Asn Leu Glu Ser Phe Tyr His Ile
 515 520 525

Asp Asn Ala Leu Ser Leu Ala Ser Leu Ala Val Asn Cys Thr Ala Asp
 530 535 540

Lys Ser Leu Ser Arg Pro Ser Met Ala Glu Ile Val Leu Ser Leu Ser
 545 550 555 560

Phe Leu Thr Gln Gln Ser Ser Asn Pro Thr Leu Glu Arg Ser Leu Thr
 565 570 575

Ser Ser Gly Leu Asp Val Glu Asp Asp Ala His Ile Val Thr Ser Ile
 580 585 590

Thr Ala Arg
 595

<210> 32
 <211> 595
 <212> PRT
 <213> *Medicago truncatula*

<220>
 <221> PEPTIDE
 <222> (1)..(595)

<400> 32

Met Ser Ala Phe Phe Leu Pro Ser Ser Ser His Ala Leu Phe Leu Val
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Leu Met Leu Phe Phe Leu Thr Asn Ile Ser Ala Gln Pro Leu Tyr Ile
 20 25 30

Ser Glu Thr Asn Phe Thr Cys Pro Val Asp Ser Pro Pro Ser Cys Glu
 35 40 45

Thr Tyr Val Ala Tyr Arg Ala Gln Ser Pro Asn Phe Leu Ser Leu Ser
 50 55 60

Asn Ile Ser Asp Ile Phe Asn Leu Ser Pro Leu Arg Ile Ala Lys Ala
 65 70 75 80

Ser Asn Ile Glu Ala Glu Asp Lys Lys Leu Ile Pro Asp Gln Leu Leu
 85 90 95

Leu Val Pro Val Thr Cys Gly Cys Thr Lys Asn His Ser Phe Ala Asn
 100 105 110

Ile Thr Tyr Ser Ile Lys Gln Gly Asp Asn Phe Phe Ile Leu Ser Ile
 115 120 125

Thr Ser Tyr Gln Asn Leu Thr Asn Tyr Leu Glu Phe Lys Asn Phe Asn
 130 135 140

Pro Asn Leu Ser Pro Thr Leu Leu Pro Leu Asp Thr Lys Val Ser Val
 145 150 155 160

Pro Leu Phe Cys Lys Cys Pro Ser Lys Asn Gln Leu Asn Lys Gly Ile
 165 170 175

Lys Tyr Leu Ile Thr Tyr Val Trp Gln Asp Asn Asp Asn Val Thr Leu
 180 185 190

Val Ser Ser Lys Phe Gly Ala Ser Gln Val Glu Met Leu Ala Glu Asn
195 200 205

Asn His Asn Phe Thr Ala Ser Thr Asn Arg Ser Val Leu Ile Pro Val
210 215 220

Thr Ser Leu Pro Lys Leu Asp Gln Pro Ser Ser Asn Gly Arg Lys Ser
225 230 235 240

Ser Ser Gln Asn Leu Ala Leu Ile Ile Gly Ile Ser Leu Gly Ser Ala
245 250 255

Phe Phe Ile Leu Val Leu Thr Leu Ser Leu Val Tyr Val Tyr Cys Leu
260 265 270

Lys Met Lys Arg Leu Asn Arg Ser Thr Ser Ser Ser Glu Thr Ala Asp
275 280 285

Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys Pro Thr Met Tyr
290 295 300

Glu Ile Asp Ala Ile Met Glu Gly Thr Thr Asn Leu Ser Asp Asn Cys
305 310 315 320

Lys Ile Gly Glu Ser Val Tyr Lys Ala Asn Ile Asp Gly Arg Val Leu
325 330 335

Ala Val Lys Lys Ile Lys Lys Asp Ala Ser Glu Glu Leu Lys Ile Leu
340 345 350

Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val Ser Ser
355 360 365

Asp Asn Asp Gly Asn Cys Phe Leu Val Tyr Glu Tyr Ala Glu Asn Gly
370 375 380

Ser Leu Glu Glu Trp Leu Phe Ser Glu Ser Ser Lys Thr Ser Asn Ser
385 390 395 400

Val Val Ser Leu Thr Trp Ser Gln Arg Ile Thr Ile Ala Met Asp Val
405 410 415

Ala Ile Gly Leu Gln Tyr Met His Glu His Thr Tyr Pro Arg Ile Ile
420 425 430

His Arg Asp Ile Thr Thr Ser Asn Ile Leu Leu Gly Ser Asn Phe Lys
 435 440 445

Ala Lys Ile Ala Asn Phe Gly Met Ala Arg Thr Ser Thr Asn Ser Met
 450 455 460

Met Pro Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu Ile Glu Leu
 465 470 475 480

Leu Thr Gly Lys Lys Ala Met Thr Thr Lys Glu Asn Gly Glu Val Val
 485 490 495

Ile Leu Trp Lys Asp Phe Trp Lys Ile Phe Asp Leu Glu Gly Asn Arg
 500 505 510

Glu Glu Arg Leu Arg Lys Trp Met Asp Pro Lys Leu Glu Ser Phe Tyr
 515 520 525

Pro Ile Asp Asn Ala Leu Ser Leu Ala Ser Leu Ala Val Asn Cys Thr
 530 535 540

Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile Val Leu Cys
 545 550 555 560

Leu Ser Leu Leu Asn Gln Pro Ser Ser Glu Pro Met Leu Glu Arg Ser
 565 570 575

Leu Thr Ser Gly Leu Asp Ala Glu Ala Thr His Val Val Thr Ser Val
 580 585 590

Ile Ala Arg
 595

<210> 33
 <211> 24
 <212> DNA
 <213> Phaseolus vulgaris

<220>
 <221> misc_feature
 <222> (1)..(24)
 <223> Primer to amplify fragment of NPR5

<400> 33
 cattgcaara gccagtaaca taga

<210> 34
 <211> 30
 <212> DNA
 <213> Phaseolus vulgaris

 <220>
 <221> misc_feature
 <222> (1)..(30)
 <223> To amplify a fragment of NPR5

 <400> 34
 aacgwgcwry wayrgaagtm acaayatgag 30

 <210> 35
 <211> 35
 <212> DNA
 <213> Phaseolus vulgaris

 <220>
 <221> misc_feature
 <222> (1)..(35)
 <223> NPR5 5'RACE primer

 <400> 35
 cgactgggat atgtatgtca catatgtttc acatg 35

 <210> 36
 <211> 22
 <212> DNA
 <213> Phaseolus vulgaris

 <220>
 <221> misc_feature
 <222> (1)..(22)
 <223> NPR5 3' RACE primer

 <400> 36
 gatagaattg cttactggca gg 22

 <210> 37
 <211> 21
 <212> DNA
 <213> Phaseolus vulgaris

 <220>
 <221> misc_feature
 <222> (1)..(21)

 <400> 37
 gacgtgtcca ctgtatccag g 21

<210> 38
 <211> 24
 <212> DNA
 <213> Phaseolus vulgaris

<220>
 <221> misc_feature
 <222> (1)..(24)
 <223> NPR5 gene PCR primer

<400> 38
 gtttggacat gcaataaaca actc

24

<210> 39
 <211> 2164
 <212> DNA
 <213> Phaseolus vulgaris

<220>
 <221> 5'UTR
 <222> (1)..(172)

<220>
 <221> CDS
 <222> (173)..(1963)

<220>
 <221> 3'UTR
 <222> (1964)..(2164)

<400> 39
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 ttatattaag ccaaaagata tttttattga caaagaacta catatcaaca acgacgattg 120
 ccagtgatag tagactgcct cataactttc atttgttcac aacttcacat ca atg gct 178
 Met Ala
 1
 gtc ttc ttt gtt tct ctt act ctt ggt gct cag att ctt tat gtg gta 226
 Val Phe Phe Val Ser Leu Thr Leu Gly Ala Gln Ile Leu Tyr Val Val
 5 10 15
 ctc atg ttt ttc act tgt att gaa gct caa tca caa cag acc aat gga 274
 Leu Met Phe Phe Thr Cys Ile Glu Ala Gln Ser Gln Gln Thr Asn Gly
 20 25 30
 aca aac ttt tca tgc cct tcc aat tca cct cct tca tgt gaa aca tat 322
 Thr Asn Phe Ser Cys Pro Ser Asn Ser Pro Pro Ser Cys Glu Thr Tyr
 35 40 45 50
 gtg aca tac ata tcc cag tcg cca aat ttt ttg agt ctg acc agc gta 370
 Val Thr Tyr Ile Ser Gln Ser Pro Asn Phe Leu Ser Leu Thr Ser Val
 55 60 65
 tct aat ata ttt gac acg agt cct ttg tca att gcc aga gcc agc aac 418
 Ser Asn Ile Phe Asp Thr Ser Pro Leu Ser Ile Ala Arg Ala Ser Asn

70					75					80						
tta	cag	cat	gag	gaa	gac	aag	ttg	att	cca	ggc	caa	gtc	tta	ctg	ata	466
Leu	Gln	His	Glu	Glu	Asp	Lys	Leu	Ile	Pro	Gly	Gln	Val	Leu	Leu	Ile	
	85						90					95				
cca	gta	acc	tgt	ggc	tgc	act	gga	aac	cgc	tct	ttc	gcc	aac	atc	tcc	514
Pro	Val	Thr	Cys	Gly	Cys	Thr	Gly	Asn	Arg	Ser	Phe	Ala	Asn	Ile	Ser	
	100					105					110					
tat	gag	atc	aac	caa	ggc	gat	agc	ttc	tac	ttt	gtt	gcg	acc	act	tta	562
Tyr	Glu	Ile	Asn	Gln	Gly	Asp	Ser	Phe	Tyr		Val	Ala	Thr	Thr	Leu	
	115				120					125					130	
tac	cag	aat	ctc	aca	aat	tgg	cat	gca	gtg	atg	gat	tta	aac	cca	ggc	610
Tyr	Gln	Asn	Leu	Thr	Asn	Trp	His	Ala	Val	Met	Asp	Leu	Asn	Pro	Gly	
				135					140					145		
cta	agt	caa	ttt	act	ttg	cca	ata	ggc	atc	caa	gtt	gta	att	cct	tta	658
Leu	Ser	Gln	Phe	Thr	Leu	Pro	Ile	Gly	Ile	Gln	Val	Val	Ile	Pro	Leu	
			150					155					160			
ttc	tgc	aag	tgt	cct	tca	aag	aac	cag	ctg	gat	aga	ggg	ata	aag	tac	706
Phe	Cys	Lys	Cys	Pro	Ser	Lys	Asn	Gln	Leu	Asp	Arg	Gly	Ile	Lys	Tyr	
		165					170					175				
ctg	atc	act	cac	gtc	tgg	cag	ccc	aat	gac	aat	gtt	tcc	ttt	gta	agt	754
Leu	Ile	Thr	His	Val	Trp	Gln	Pro	Asn	Asp	Asn	Val	Ser	Phe	Val	Ser	
	180					185					190					
aac	aag	tta	ggc	gca	tca	cca	cag	gac	ata	ttg	agt	gaa	aac	aac	tat	802
Asn	Lys	Leu	Gly	Ala	Ser	Pro	Gln	Asp	Ile	Leu	Ser	Glu	Asn	Asn	Tyr	
	195				200					205					210	
ggc	caa	aat	ttc	act	gcc	gca	agc	aac	ctt	cca	gtt	ttg	atc	cca	gtt	850
Gly	Gln	Asn	Phe	Thr	Ala	Ala	Ser	Asn	Leu	Pro	Val	Leu	Ile	Pro	Val	
				215					220					225		
aca	ctc	ttg	cca	gat	ctt	att	caa	tct	cct	tca	gat	gga	aga	aaa	cac	898
Thr	Leu	Leu	Pro	Asp	Leu	Ile	Gln	Ser	Pro	Ser	Asp	Gly	Arg	Lys	His	
			230					235					240			
aga	att	ggc	ctt	cca	gtt	ata	att	ggc	atc	agc	ctg	gga	tgc	aca	cta	946
Arg	Ile	Gly	Leu	Pro	Val	Ile	Ile	Gly	Ile	Ser	Leu	Gly	Cys	Thr	Leu	
		245					250					255				
ctg	gtt	gtg	gtt	tca	gca	ata	tta	ctg	gtg	tgt	gta	tgt	tgt	ctg	aaa	994
Leu	Val	Val	Val	Ser	Ala	Ile	Leu	Leu	Val	Cys	Val	Cys	Cys	Leu	Lys	
	260					265					270					
atg	aag	agt	ttg	aat	agg	agt	gct	tca	tca	gct	gaa	act	gca	gat	aaa	1042
Met	Lys	Ser	Leu	Asn	Arg	Ser	Ala	Ser	Ser	Ala	Glu	Thr	Ala	Asp	Lys	
	275				280					285					290	
cta	ctt	tct	gga	gtt	tca	ggc	tat	gta	agt	aag	cct	aca	atg	tat	gaa	1090
Leu	Leu	Ser	Gly	Val	Ser	Gly	Tyr	Val	Ser	Lys	Pro	Thr	Met	Tyr	Glu	
				295				300						305		
act	ggc	gca	ata	ttg	gaa	gct	act	atg	aac	ctc	agt	gag	cag	tgc	aag	1138
Thr	Gly	Ala	Ile	Leu	Glu	Ala	Thr	Met	Asn	Leu	Ser	Glu	Gln	Cys	Lys	

310	315	320	
att ggg gaa tca gtg tac aag gct aac ata gag ggt aag gtt tta gca Ile Gly Glu Ser Val Tyr Lys Ala Asn Ile Glu Gly Lys Val Leu Ala 325 330 335			1186
gta aaa aga ttc aag gaa gat gtc acg gag gag ctg aaa att ctg cag Val Lys Arg Phe Lys Glu Asp Val Thr Glu Glu Leu Lys Ile Leu Gln 340 345 350			1234
aag gtg aat cat gga aat ctg gtg aaa cta atg ggt gtc tca tca gat Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val Ser Ser Asp 355 360 365 370			1282
aat gat gga aat tgt ttt gtg gtt tat gaa tat gct gaa aat ggg tct Asn Asp Gly Asn Cys Phe Val Val Tyr Glu Tyr Ala Glu Asn Gly Ser 375 380 385			1330
ctt gaa gag tgg ctt ttc gcc aag tct tgt tca gag aca tca aac tca Leu Glu Glu Trp Leu Phe Ala Lys Ser Cys Ser Glu Thr Ser Asn Ser 390 395 400			1378
agg acc tcc ctt aca tgg tgc cag agg ata agc ata gca gtg gat gtt Arg Thr Ser Leu Thr Trp Cys Gln Arg Ile Ser Ile Ala Val Asp Val 405 410 415			1426
tca atg ggt ctg cag tac atg cat gaa cat gct tat cca aga ata gtc Ser Met Gly Leu Gln Tyr Met His Glu His Ala Tyr Pro Arg Ile Val 420 425 430			1474
cac agg gac atc aca agc agt aat atc ctt ctt gac tcc aac ttt aag His Arg Asp Ile Thr Ser Ser Asn Ile Leu Leu Asp Ser Asn Phe Lys 435 440 445 450			1522
gcc aag ata gca aat ttc tcc atg gcc aga act ttt acc aac ccc atg Ala Lys Ile Ala Asn Phe Ser Met Ala Arg Thr Phe Thr Asn Pro Met 455 460 465			1570
atg tca aaa ata gat gta ttt gct ttt ggg gtg gtt ctg ata gaa ttg Met Ser Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu Ile Glu Leu 470 475 480			1618
ctt act ggc agg aaa gcc atg aca acc aaa gaa aat ggt gag gtg gtt Leu Thr Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly Glu Val Val 485 490 495			1666
atg ctg tgg aag gac att tgg aag atc ttt gat caa gaa gag aat aga Met Leu Trp Lys Asp Ile Trp Lys Ile Phe Asp Gln Glu Glu Asn Arg 500 505 510			1714
gag gag agg ctc aga aaa tgg atg gat cct aag tta gat aat tat tat Glu Glu Arg Leu Arg Lys Trp Met Asp Pro Lys Leu Asp Asn Tyr Tyr 515 520 525 530			1762
cct att gat tat gct ctc agc ttg gcc tcc ttg gca gtg aat tgc act Pro Ile Asp Tyr Ala Leu Ser Leu Ala Ser Leu Ala Val Asn Cys Thr 535 540 545			1810
gca gac aag tct ttg tcc aga cca acc ata gca gaa att gtc ctt agt Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile Val Leu Ser			1858

550	555	560	
ctc tcc ctt ctc act caa cca tct ccc gcg aca ctg gag aga tcc ttg			1906
Leu Ser Leu Leu Thr Gln Pro Ser Pro Ala Thr Leu Glu Arg Ser Leu			
565	570	575	
act tct tct gga tta gat gta gaa gct act caa att gtc act tcc atc			1954
Thr Ser Ser Gly Leu Asp Val Glu Ala Thr Gln Ile Val Thr Ser Ile			
580	585	590	
tca gct cgt tgattgagtg aagccaatct agtttctcac atccaagatg			2003
Ser Ala Arg			
595			
gtactttttt ttaaataatg attgcacctt agtcaataat gatgaacttg gtttatgggg			2063
agttttcaac atttagtgtt tccatccctg ttgttcttta tgtttgaggt agagttcgta			2123
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Asn Gly Thr Asn Phe Ser Cys Pro Ser Asn Ser Pro Pro Ser Cys Glu			
35	40	45	
Thr Tyr Val Thr Tyr Ile Ser Gln Ser Pro Asn Phe Leu Ser Leu Thr			
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Ser Val Ser Asn Ile Phe Asp Thr Ser Pro Leu Ser Ile Ala Arg Ala			
65	70	75	80
Ser Asn Leu Gln His Glu Glu Asp Lys Leu Ile Pro Gly Gln Val Leu			
85	90	95	
Leu Ile Pro Val Thr Cys Gly Cys Thr Gly Asn Arg Ser Phe Ala Asn			
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Ile Ser Tyr Glu Ile Asn Gln Gly Asp Ser Phe Tyr Phe Val Ala Thr			
115	120	125	

Thr Leu Tyr Gln Asn Leu Thr Asn Trp His Ala Val Met Asp Leu Asn
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Pro Gly Leu Ser Gln Phe Thr Leu Pro Ile Gly Ile Gln Val Val Ile
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Pro Leu Phe Cys Lys Cys Pro Ser Lys Asn Gln Leu Asp Arg Gly Ile
 165 170 175

Lys Tyr Leu Ile Thr His Val Trp Gln Pro Asn Asp Asn Val Ser Phe
 180 185 190

Val Ser Asn Lys Leu Gly Ala Ser Pro Gln Asp Ile Leu Ser Glu Asn
 195 200 205

Asn Tyr Gly Gln Asn Phe Thr Ala Ala Ser Asn Leu Pro Val Leu Ile
 210 215 220

Pro Val Thr Leu Leu Pro Asp Leu Ile Gln Ser Pro Ser Asp Gly Arg
 225 230 235 240

Lys His Arg Ile Gly Leu Pro Val Ile Ile Gly Ile Ser Leu Gly Cys
 245 250 255

Thr Leu Leu Val Val Val Ser Ala Ile Leu Leu Val Cys Val Cys Cys
 260 265 270

Leu Lys Met Lys Ser Leu Asn Arg Ser Ala Ser Ser Ala Glu Thr Ala
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Asp Lys Leu Leu Ser Gly Val Ser Gly Tyr Val Ser Lys Pro Thr Met
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Tyr Glu Thr Gly Ala Ile Leu Glu Ala Thr Met Asn Leu Ser Glu Gln
 305 310 315 320

Cys Lys Ile Gly Glu Ser Val Tyr Lys Ala Asn Ile Glu Gly Lys Val
 325 330 335

Leu Ala Val Lys Arg Phe Lys Glu Asp Val Thr Glu Glu Leu Lys Ile
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Leu Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val Ser
 355 360 365

Ser Asp Asn Asp Gly Asn Cys Phe Val Val Tyr Glu Tyr Ala Glu Asn
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Gly Ser Leu Glu Glu Trp Leu Phe Ala Lys Ser Cys Ser Glu Thr Ser
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Asn Ser Arg Thr Ser Leu Thr Trp Cys Gln Arg Ile Ser Ile Ala Val
 405 410 415

Asp Val Ser Met Gly Leu Gln Tyr Met His Glu His Ala Tyr Pro Arg
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Ile Val His Arg Asp Ile Thr Ser Ser Asn Ile Leu Leu Asp Ser Asn
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Phe Lys Ala Lys Ile Ala Asn Phe Ser Met Ala Arg Thr Phe Thr Asn
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Pro Met Met Ser Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu Ile
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Glu Leu Leu Thr Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly Glu
 485 490 495

Val Val Met Leu Trp Lys Asp Ile Trp Lys Ile Phe Asp Gln Glu Glu
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Asn Arg Glu Glu Arg Leu Arg Lys Trp Met Asp Pro Lys Leu Asp Asn
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Tyr Tyr Pro Ile Asp Tyr Ala Leu Ser Leu Ala Ser Leu Ala Val Asn
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Cys Thr Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile Val
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Leu Ser Leu Ser Leu Leu Thr Gln Pro Ser Pro Ala Thr Leu Glu Arg
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Ser Ile Ser Ala Arg
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      Met Ala Val Phe Phe Pro Phe Leu Pro Leu His Ser Gln Ile
        1             5             10

ctt tgt ctt gtg atc atg ttg ttt tcc act aat att gta gct caa tca    158
Leu Cys Leu Val Ile Met Leu Phe Ser Thr Asn Ile Val Ala Gln Ser
15             20             25             30

caa cag gac aat aga aca aac ttt tca tgc cct tct gat tca ccg cct    206

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Ser	Cys	Glu	Thr	Tyr	Val	Thr	Tyr	Ile	Ala	Gln	Ser	Pro	Asn	Phe	Leu		
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agt	cta	acc	aac	ata	tcc	aat	ata	ttt	gac	aca	agc	cct	tta	tcc	att	302	
Ser	Leu	Thr	Asn	Ile	Ser	Asn	Ile	Phe	Asp	Thr	Ser	Pro	Leu	Ser	Ile		
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Ala	Arg	Ala	Ser	Asn	Leu	Glu	Pro	Met	Asp	Asp	Lys	Leu	Val	Lys	Asp		
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caa	gtc	tta	ctc	gta	cca	gta	acc	tgt	ggc	tgc	act	gga	aac	cgc	tct	398	
Gln	Val	Leu	Leu	Val	Pro	Val	Thr	Cys	Gly	Cys	Thr	Gly	Asn	Arg	Ser		
	95				100					105					110		
ttt	gcc	aat	atc	tcc	tat	gag	atc	aac	caa	ggc	gat	agc	ttc	tac	ttt	446	
Phe	Ala	Asn	Ile	Ser	Tyr	Glu	Ile	Asn	Gln	Gly	Asp	Ser	Phe	Tyr	Phe		
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gtt	gca	acc	act	tca	tac	gag	aat	ctc	acg	aat	tgg	cgt	gca	gtg	atg	494	
Val	Ala	Thr	Thr	Ser	Tyr	Glu	Asn	Leu	Thr	Asn	Trp	Arg	Ala	Val	Met		
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Asp	Leu	Asn	Pro	Val	Leu	Ser	Pro	Asn	Lys	Leu	Pro	Ile	Gly	Ile	Gln		
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Val	Val	Phe	Pro	Leu	Phe	Cys	Lys	Cys	Pro	Ser	Lys	Asn	Gln	Leu	Asp		
	160					165					170						
aaa	gag	ata	aag	tac	ctg	att	aca	tac	gtg	tgg	aag	ccc	ggc	gac	aat	638	
Lys	Glu	Ile	Lys	Tyr	Leu	Ile	Thr	Tyr	Val	Trp	Lys	Pro	Gly	Asp	Asn		
	175				180				185					190			
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Val	Ser	Leu	Val	Ser	Asp	Lys	Phe	Gly	Ala	Ser	Pro	Glu	Asp	Ile	Met		
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agt	gaa	aac	aac	tat	ggc	cag	aac	ttt	act	gct	gca	aac	aac	ctt	cca	734	
Ser	Glu	Asn	Asn	Tyr	Gly	Gln	Asn	Phe	Thr	Ala	Ala	Asn	Asn	Leu	Pro		
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Val	Leu	Ile	Pro	Val	Thr	Arg	Leu	Pro	Val	Leu	Ala	Arg	Ser	Pro	Ser		
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Asp	Gly	Arg	Lys	Gly	Gly	Ile	Arg	Leu	Pro	Val	Ile	Ile	Gly	Ile	Ser		
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Leu	Gly	Cys	Thr	Leu	Leu	Val	Leu	Val	Leu	Ala	Val	Leu	Leu	Val	Tyr		
	255				260					265					270		
gta	tat	tgt	ctg	aaa	atg	aag	act	ttg	aat	agg	agt	gct	tca	tcg	gct	926	

Val	Tyr	Cys	Leu	Lys	Met	Lys	Thr	Leu	Asn	Arg	Ser	Ala	Ser	Ser	Ala		
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gaa	act	gca	gat	aaa	cta	ctt	tct	gga	gtt	tca	ggc	tat	gta	agt	aag		974
Glu	Thr	Ala	Asp	Lys	Leu	Leu	Ser	Gly	Val	Ser	Gly	Tyr	Val	Ser	Lys		
				290				295					300				
cct	acc	atg	tat	gaa	act	gat	gcg	atc	atg	gaa	gct	aca	atg	aac	ctc		1022
Pro	Thr	Met	Tyr	Glu	Thr	Asp	Ala	Ile	Met	Glu	Ala	Thr	Met	Asn	Leu		
				305			310					315					
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Ser	Glu	Gln	Cys	Lys	Ile	Gly	Glu	Ser	Val	Tyr	Lys	Ala	Asn	Ile	Glu		
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Gly	Lys	Val	Leu	Ala	Val	Lys	Arg	Phe	Lys	Glu	Asp	Val	Thr	Glu	Glu		
	335				340					345					350		
ctg	aaa	att	ctg	cag	aag	gtg	aat	cat	ggg	aat	ctg	gtg	aaa	cta	atg		1166
Leu	Lys	Ile	Leu	Gln	Lys	Val	Asn	His	Gly	Asn	Leu	Val	Lys	Leu	Met		
				355					360					365			
ggg	gtc	tca	tca	gac	aat	gat	gga	aac	tgt	ttt	gtg	gtt	tat	gaa	tac		1214
Gly	Val	Ser	Ser	Asp	Asn	Asp	Gly	Asn	Cys	Phe	Val	Val	Tyr	Glu	Tyr		
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gct	gaa	aat	ggg	tct	ctt	gat	gag	tgg	cta	ttc	tcc	aag	tct	tgt	tca		1262
Ala	Glu	Asn	Gly	Ser	Leu	Asp	Glu	Trp	Leu	Phe	Ser	Lys	Ser	Cys	Ser		
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gac	aca	tca	aac	tca	agg	gca	tcc	ctt	aca	tgg	tgt	cag	agg	ata	agc		1310
Asp	Thr	Ser	Asn	Ser	Arg	Ala	Ser	Leu	Thr	Trp	Cys	Gln	Arg	Ile	Ser		
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Met	Ala	Val	Asp	Val	Ala	Met	Gly	Leu	Gln	Tyr	Met	His	Glu	His	Ala		
	415				420					425					430		
tat	cca	aga	ata	gtc	cac	agg	gac	atc	aca	agc	agt	aat	atc	ctt	ctt		1406
Tyr	Pro	Arg	Ile	Val	His	Arg	Asp	Ile	Thr	Ser	Ser	Asn	Ile	Leu	Leu		
				435				440						445			
gac	tcg	aac	ttt	aag	gcc	aag	ata	gca	aat	ttc	tcc	atg	gcc	aga	act		1454
Asp	Ser	Asn	Phe	Lys	Ala	Lys	Ile	Ala	Asn	Phe	Ser	Met	Ala	Arg	Thr		
			450					455					460				
ttt	acc	aac	ccc	atg	atg	cca	aag	ata	gat	gtc	ttt	gca	ttt	ggg	gtg		1502
Phe	Thr	Asn	Pro	Met	Met	Pro	Lys	Ile	Asp	Val	Phe	Ala	Phe	Gly	Val		
		465					470					475					
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Val	Leu	Ile	Glu	Leu	Leu	Thr	Gly	Arg	Lys	Ala	Met	Thr	Thr	Lys	Glu		
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aat	ggg	gag	gtg	gtc	atg	ctg	tgg	aag	gac	att	tgg	aag	atc	ttt	gat		1598
Asn	Gly	Glu	Val	Val	Met	Leu	Trp	Lys	Asp	Ile	Trp	Lys	Ile	Phe	Asp		
	495				500					505					510		
caa	gaa	gag	aat	aga	gag	gag	agg	ctc	aaa	aaa	tgg	atg	gat	cct	aag		1646

Gln Glu Glu Asn Arg Glu Glu Arg Leu Lys Lys Trp Met Asp Pro Lys
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tta gag agt tat tat cct ata gat tac gct ctc agc ttg gcc tcc ttg 1694
 Leu Glu Ser Tyr Tyr Pro Ile Asp Tyr Ala Leu Ser Leu Ala Ser Leu
 530 535 540

gcg gtg aat tgt act gca gat aag tct ttg tcc aga cca acc att gca 1742
 Ala Val Asn Cys Thr Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala
 545 550 555

gaa att gtc ctt agc ctc tcc ctt ctc act caa cca tct ccc gca aca 1790
 Glu Ile Val Leu Ser Leu Ser Leu Leu Thr Gln Pro Ser Pro Ala Thr
 560 565 570

ttg gag aga tcc ttg act tct tct gga ttg gat gta gaa gct act caa 1838
 Leu Glu Arg Ser Leu Thr Ser Ser Gly Leu Asp Val Glu Ala Thr Gln
 575 580 585 590

att gtc act tcc ata gca gct cgt tgattgagtg aaggaaattt agtttctcaa 1892
 Ile Val Thr Ser Ile Ala Ala Arg
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Asp Asn Arg Thr Asn Phe Ser Cys Pro Ser Asp Ser Pro Pro Ser Cys
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Glu Thr Tyr Val Thr Tyr Ile Ala Gln Ser Pro Asn Phe Leu Ser Leu
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Thr Asn Ile Ser Asn Ile Phe Asp Thr Ser Pro Leu Ser Ile Ala Arg
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Ala Ser Asn Leu Glu Pro Met Asp Asp Lys Leu Val Lys Asp Gln Val

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Phe	Pro	Leu	Phe	Cys	Lys	Cys	Pro	Ser	Lys	Asn	Gln	Leu	Asp	Lys	Glu
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Arg	Lys	Gly	Gly	Ile	Arg	Leu	Pro	Val	Ile	Ile	Gly	Ile	Ser	Leu	Gly
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Cys	Thr	Leu	Leu	Val	Leu	Val	Leu	Ala	Val	Leu	Leu	Val	Tyr	Val	Tyr
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Cys	Leu	Lys	Met	Lys	Thr	Leu	Asn	Arg	Ser	Ala	Ser	Ser	Ala	Glu	Thr
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Gln	Cys	Lys	Ile	Gly	Glu	Ser	Val	Tyr	Lys	Ala	Asn	Ile	Glu	Gly	Lys

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Ile Leu Gln Lys Val Asn His Gly Asn Leu Val Lys Leu Met Gly Val					
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Ser Ser Asp Asn Asp Gly Asn Cys Phe Val Val Tyr Glu Tyr Ala Glu					
370		375		380	
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385		390		395	400
Ser Asn Ser Arg Ala Ser Leu Thr Trp Cys Gln Arg Ile Ser Met Ala					
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Val Asp Val Ala Met Gly Leu Gln Tyr Met His Glu His Ala Tyr Pro					
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Arg Ile Val His Arg Asp Ile Thr Ser Ser Asn Ile Leu Leu Asp Ser					
	435		440		445
Asn Phe Lys Ala Lys Ile Ala Asn Phe Ser Met Ala Arg Thr Phe Thr					
450		455		460	
Asn Pro Met Met Pro Lys Ile Asp Val Phe Ala Phe Gly Val Val Leu					
465		470		475	480
Ile Glu Leu Leu Thr Gly Arg Lys Ala Met Thr Thr Lys Glu Asn Gly					
	485		490		495
Glu Val Val Met Leu Trp Lys Asp Ile Trp Lys Ile Phe Asp Gln Glu					
	500		505		510
Glu Asn Arg Glu Glu Arg Leu Lys Lys Trp Met Asp Pro Lys Leu Glu					
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Ser Tyr Tyr Pro Ile Asp Tyr Ala Leu Ser Leu Ala Ser Leu Ala Val					
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Asn Cys Thr Ala Asp Lys Ser Leu Ser Arg Pro Thr Ile Ala Glu Ile					
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Val Leu Ser Leu Ser Leu Leu Thr Gln Pro Ser Pro Ala Thr Leu Glu					

565

570

575

Arg Ser Leu Thr Ser Ser Gly Leu Asp Val Glu Ala Thr Gln Ile Val
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Thr Ser Ile Ala Ala Arg
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Met Lys Leu Lys Asn Gly Leu Leu Leu Phe Phe Leu Phe Val Glu	
1 5 10 15	
tgt gct ttt ttc aaa gtg gat tca aag tgt gtg aaa ggg tgt gat cta	158
Cys Ala Phe Phe Lys Val Asp Ser Lys Cys Val Lys Gly Cys Asp Leu	
20 25 30	
gct tta gct tct tac tat gta atg cct tta gtt gaa ctc cca act ata	206
Ala Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Glu Leu Pro Thr Ile	
35 40 45	
aaa aac tat atg caa tca aag ata gtt acc aac tct tct gat gtt tta	254
Lys Asn Tyr Met Gln Ser Lys Ile Val Thr Asn Ser Ser Asp Val Leu	
50 55 60	
aat agt tac aac aaa gtc tta gta acc aat cat ggt aat att ttt tcc	302
Asn Ser Tyr Asn Lys Val Leu Val Thr Asn His Gly Asn Ile Phe Ser	
65 70 75	
tat ttt aga atc aac att cca ttc cca tgt gaa tgt att gga ggt gag	350
Tyr Phe Arg Ile Asn Ile Pro Phe Pro Cys Glu Cys Ile Gly Gly Glu	
80 85 90 95	
ttc tta gga cat gtg ttt gaa tat aca aca aag aaa gga gat act tat	398
Phe Leu Gly His Val Phe Glu Tyr Thr Lys Lys Gly Asp Thr Tyr	
100 105 110	
gat ttg att gca aat aat tat tat gta agt ttg act agt gtt gag ctt	446
Asp Leu Ile Ala Asn Asn Tyr Tyr Val Ser Leu Thr Ser Val Glu Leu	
115 120 125	
ttg aag aag ttt aac agc tat gat cca aat cat ata cct gct aag gct	494
Leu Lys Lys Phe Asn Ser Tyr Asp Pro Asn His Ile Pro Ala Lys Ala	
130 135 140	
aag gtt aat gtt act gtg aat tgt tct tgt ggg aat agc cag att tca	542
Lys Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Ile Ser	
145 150 155	
aaa gat tat ggc ttg ttt gtt act tat ccg tta agg tct acg gat tct	590
Lys Asp Tyr Gly Leu Phe Val Thr Tyr Pro Leu Arg Ser Thr Asp Ser	
160 165 170 175	
ctt gag aag att gcg aac gag tcg aaa ctt gat gaa ggg ttg ata cag	638
Leu Glu Lys Ile Ala Asn Glu Ser Lys Leu Asp Glu Gly Leu Ile Gln	
180 185 190	
aat ttc aac cct gat gtc aat ttc agt aga gga agt ggg ata gtg ttc	686
Asn Phe Asn Pro Asp Val Asn Phe Ser Arg Gly Ser Gly Ile Val Phe	
195 200 205	
att cca gga aga gat aaa aat gga gaa tat gtt cct ttg tat cct aaa	734
Ile Pro Gly Arg Asp Lys Asn Gly Glu Tyr Val Pro Leu Tyr Pro Lys	
210 215 220	
aca ggt gtt ggt aag ggt gta gct att ggt ata tct ata gca gga gta	782
Thr Gly Val Gly Lys Gly Val Ala Ile Gly Ile Ser Ile Ala Gly Val	

225	230	235	
ttt gcg gtt ctg tta	ttt gtt atc tgt ata	tat gtc aaa tac ttc cag	830
Phe Ala Val Leu Leu	Phe Val Ile Cys Ile	Tyr Val Lys Tyr Phe Gln	
240	245	250 255	
aaa aag gaa gaa gag	aaa act ata ctg ccc	caa gtt tct aag gcg ctt	878
Lys Lys Glu Glu Glu	Lys Thr Ile Leu Pro	Gln Val Ser Lys Ala Leu	
260	265	270	
tcg act caa gat ggt	aat gcc tcg agt agt	gga gaa tat gaa act tca	926
Ser Thr Gln Asp Gly	Asn Ala Ser Ser Ser	Gly Glu Tyr Glu Thr Ser	
275	280	285	
gga tct agt ggg cat	ggt act ggt agt gct	gca ggc ctc aca gga atc	974
Gly Ser Ser Gly His	Gly Thr Gly Ser Ala	Ala Gly Leu Thr Gly Ile	
290	295	300	
atg gtg gca aag tca	act gag ttt tca tat	caa gag cta gcc aag gct	1022
Met Val Ala Lys Ser	Thr Glu Phe Ser Tyr	Gln Glu Leu Ala Lys Ala	
305	310	315	
aca gat aac ttt agt	ttg gat aat aaa atc	ggt caa ggt gga ttt gga	1070
Thr Asp Asn Phe Ser	Leu Asp Asn Lys Ile	Gly Gln Gly Gly Phe Gly	
320	325	330 335	
gct gtc tat tat gca	gaa ctc aga ggc gag	aaa aca gca atc aag aag	1118
Ala Val Tyr Tyr Ala	Glu Leu Arg Gly Glu	Lys Thr Ala Ile Lys Lys	
340	345	350	
atg aat gtg caa gca	tca tca gaa ttt ctg	tgt gag ttg aag gtc tta	1166
Met Asn Val Gln Ala	Ser Ser Glu Phe Leu	Cys Glu Leu Lys Val Leu	
355	360	365	
acg cac gtt cat cat	ttg aat ctg gtg agg	ttg att gga tat tgc gtt	1214
Thr His Val His His	Leu Asn Leu Val Arg	Leu Ile Gly Tyr Cys Val	
370	375	380	
gag ggg tcg ctt ttc	ctt gtc tat gaa cat	att gac aat gga aac ttg	1262
Glu Gly Ser Leu Phe	Leu Val Tyr Glu His	Ile Asp Asn Gly Asn Leu	
385	390	395	
ggt caa tat ttg cat	ggt aaa gat aaa gag	cca tta cca tgg tct agt	1310
Gly Gln Tyr Leu His	Gly Lys Asp Lys Glu	Pro Leu Pro Trp Ser Ser	
400	405	410 415	
aga gtc caa att gct	cta gat tca gca cga	ggc ctt gaa tac att cat	1358
Arg Val Gln Ile Ala	Leu Asp Ser Ala Arg	Gly Leu Glu Tyr Ile His	
420	425	430	
gaa cat acc gtg cct	gtg tat atc cat cgc	gat gta aaa tca gca aac	1406
Glu His Thr Val Pro	Val Tyr Ile His Arg	Asp Val Lys Ser Ala Asn	
435	440	445	
ata ttg ata gac aaa	aac ttg cgc gga aag	gtt gca gat ttt ggc ttg	1454
Ile Leu Ile Asp Lys	Asn Leu Arg Gly Lys	Val Ala Asp Phe Gly Leu	
450	455	460	
acc aaa ctt att gaa	gtt gga aat tcc aca	ctt cac act cgt ctt gtt	1502
Thr Lys Leu Ile Glu	Val Gly Asn Ser Thr	Leu His Thr Arg Leu Val	

465	470	475	
gga act ttt gga tac atg cca cca gaa tat gct caa tat ggt gac gtt			1550
Gly Thr Phe Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly Asp Val			
480	485	490	495
tct ccg aaa ata gac gta tat gct ttt gga gtt gtt ctt tat gaa ctg			1598
Ser Pro Lys Ile Asp Val Tyr Ala Phe Gly Val Val Leu Tyr Glu Leu			
	500	505	510
ata tct gca aag aat gct gtt ctg aag aca ggt gaa gaa tct gtt gct			1646
Ile Ser Ala Lys Asn Ala Val Leu Lys Thr Gly Glu Glu Ser Val Ala			
	515	520	525
gaa tca aag ggt ctt gta gcc ttg ttt gaa aaa gca ctt aat cag att			1694
Glu Ser Lys Gly Leu Val Ala Leu Phe Glu Lys Ala Leu Asn Gln Ile			
	530	535	540
gat cct tca gaa gct ctt cgc aaa ttg gtg gat cct agg ctt aaa gaa			1742
Asp Pro Ser Glu Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Lys Glu			
	545	550	555
aac tat cca att gat tct gtt tta aag atg gct caa ctt ggg aga gca			1790
Asn Tyr Pro Ile Asp Ser Val Leu Lys Met Ala Gln Leu Gly Arg Ala			
560	565	570	575
tgt aca aga gat aat cca cta cta cgc cca agt atg aga tct tta gtt			1838
Cys Thr Arg Asp Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val			
	580	585	590
gtt gat ctt atg aca ctg tca tca cca ttt gaa gat tgt gat gat gac			1886
Val Asp Leu Met Thr Leu Ser Ser Pro Phe Glu Asp Cys Asp Asp Asp			
	595	600	605
act tcc tat gaa aat caa act ctc ata aat cta ttg tca gtg aga			1931
Thr Ser Tyr Glu Asn Gln Thr Leu Ile Asn Leu Leu Ser Val Arg			
	610	615	620
tgaagggttct ttgtgccaga ttgaatgatg tttgttaaaa ctgaactagt tgggaagttt			1991
tttacttttgt gttcaaagtt tatttcccaa aatgttcaaa aggtcctaga tttcaaaaag			2051
acatcctgta attatttttta gtgaagttgt aacactgaag tacaattttgt attatgatgt			2111
gaaaacttta tttttgcttt caaaatgtac ataagataag attctaaac			2160

<210> 52
 <211> 622
 <212> PRT
 <213> Pisum sativum

<400> 52

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Ala	Phe	Phe	Lys	Val	Asp	Ser	Lys	Cys	Val	Lys	Gly	Cys	Asp	Leu	Ala
			20					25					30		

Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Glu Leu Pro Thr Ile Lys
 35 40 45

Asn Tyr Met Gln Ser Lys Ile Val Thr Asn Ser Ser Asp Val Leu Asn
 50 55 60

Ser Tyr Asn Lys Val Leu Val Thr Asn His Gly Asn Ile Phe Ser Tyr
 65 70 75 80

Phe Arg Ile Asn Ile Pro Phe Pro Cys Glu Cys Ile Gly Gly Glu Phe
 85 90 95

Leu Gly His Val Phe Glu Tyr Thr Thr Lys Lys Gly Asp Thr Tyr Asp
 100 105 110

Leu Ile Ala Asn Asn Tyr Tyr Val Ser Leu Thr Ser Val Glu Leu Leu
 115 120 125

Lys Lys Phe Asn Ser Tyr Asp Pro Asn His Ile Pro Ala Lys Ala Lys
 130 135 140

Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Ile Ser Lys
 145 150 155 160

Asp Tyr Gly Leu Phe Val Thr Tyr Pro Leu Arg Ser Thr Asp Ser Leu
 165 170 175

Glu Lys Ile Ala Asn Glu Ser Lys Leu Asp Glu Gly Leu Ile Gln Asn
 180 185 190

Phe Asn Pro Asp Val Asn Phe Ser Arg Gly Ser Gly Ile Val Phe Ile
 195 200 205

Pro Gly Arg Asp Lys Asn Gly Glu Tyr Val Pro Leu Tyr Pro Lys Thr
 210 215 220

Gly Val Gly Lys Gly Val Ala Ile Gly Ile Ser Ile Ala Gly Val Phe
 225 230 235 240

Ala Val Leu Leu Phe Val Ile Cys Ile Tyr Val Lys Tyr Phe Gln Lys
 245 250 255

Lys Glu Glu Glu Lys Thr Ile Leu Pro Gln Val Ser Lys Ala Leu Ser
 260 265 270

Thr Gln Asp Gly Asn Ala Ser Ser Ser Gly Glu Tyr Glu Thr Ser Gly
 275 280 285
 Ser Ser Gly His Gly Thr Gly Ser Ala Ala Gly Leu Thr Gly Ile Met
 290 295 300
 Val Ala Lys Ser Thr Glu Phe Ser Tyr Gln Glu Leu Ala Lys Ala Thr
 305 310 315 320
 Asp Asn Phe Ser Leu Asp Asn Lys Ile Gly Gln Gly Gly Phe Gly Ala
 325 330 335
 Val Tyr Tyr Ala Glu Leu Arg Gly Glu Lys Thr Ala Ile Lys Lys Met
 340 345 350
 Asn Val Gln Ala Ser Ser Glu Phe Leu Cys Glu Leu Lys Val Leu Thr
 355 360 365
 His Val His His Leu Asn Leu Val Arg Leu Ile Gly Tyr Cys Val Glu
 370 375 380
 Gly Ser Leu Phe Leu Val Tyr Glu His Ile Asp Asn Gly Asn Leu Gly
 385 390 395 400
 Gln Tyr Leu His Gly Lys Asp Lys Glu Pro Leu Pro Trp Ser Ser Arg
 405 410 415
 Val Gln Ile Ala Leu Asp Ser Ala Arg Gly Leu Glu Tyr Ile His Glu
 420 425 430
 His Thr Val Pro Val Tyr Ile His Arg Asp Val Lys Ser Ala Asn Ile
 435 440 445
 Leu Ile Asp Lys Asn Leu Arg Gly Lys Val Ala Asp Phe Gly Leu Thr
 450 455 460
 Lys Leu Ile Glu Val Gly Asn Ser Thr Leu His Thr Arg Leu Val Gly
 465 470 475 480
 Thr Phe Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly Asp Val Ser
 485 490 495
 Pro Lys Ile Asp Val Tyr Ala Phe Gly Val Val Leu Tyr Glu Leu Ile
 500 505 510

Ser Ala Lys Asn Ala Val Leu Lys Thr Gly Glu Glu Ser Val Ala Glu
515 520 525

Ser Lys Gly Leu Val Ala Leu Phe Glu Lys Ala Leu Asn Gln Ile Asp
530 535 540

Pro Ser Glu Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Lys Glu Asn
545 550 555 560

Tyr Pro Ile Asp Ser Val Leu Lys Met Ala Gln Leu Gly Arg Ala Cys
565 570 575

Thr Arg Asp Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val Val
580 585 590

Asp Leu Met Thr Leu Ser Ser Pro Phe Glu Asp Cys Asp Asp Asp Thr
595 600 605

Ser Tyr Glu Asn Gln Thr Leu Ile Asn Leu Leu Ser Val Arg
610 615 620

<210> 53
<211> 2217
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<222> (141)..(1991)

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tttgagttaa tttctttttc tgcttcttgc tttccttcgg cagccatttt gtgatttttt 120
ctctttccct tattgattca atg aaa ctc aaa aat ggg tta ctg ctg ttc ttt 173
Met Lys Leu Lys Asn Gly Leu Leu Leu Phe Phe
1 5 10
atg ttt ctg gat tgt att ttt ttc aaa gtg gaa tcc aag tgt gta ata 221
Met Phe Leu Asp Cys Ile Phe Phe Lys Val Glu Ser Lys Cys Val Ile
15 20 25

ggg tgt gat ata gct tta gct tcc tac tat gta atg cct tta gtt caa	269
Gly Cys Asp Ile Ala Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Gln	
30 35 40	
ctc tcc aat ata aca acc ttt atg caa tca aag ctt gtt acc aat tct	317
Leu Ser Asn Ile Thr Thr Phe Met Gln Ser Lys Leu Val Thr Asn Ser	
45 50 55	
ttt gag gtt ata gta agg tac aac aga gac att gtg ttc agt aat gat	365
Phe Glu Val Ile Val Arg Tyr Asn Arg Asp Ile Val Phe Ser Asn Asp	
60 65 70 75	
aat ctt ttt tcc tat ttt aga gtc aac att cca ttc cca tgt gaa tgt	413
Asn Leu Phe Ser Tyr Phe Arg Val Asn Ile Pro Phe Pro Cys Glu Cys	
80 85 90	
att gga ggt gaa ttt ctt ggg cat gtg ttt gaa tac act gca aat gaa	461
Ile Gly Gly Glu Phe Leu Gly His Val Phe Glu Tyr Thr Ala Asn Glu	
95 100 105	
ggc gat act tat gat tta att gca aat acc tat tat gca agc tta aca	509
Gly Asp Thr Tyr Asp Leu Ile Ala Asn Thr Tyr Tyr Ala Ser Leu Thr	
110 115 120	
act gtt gag gtt ttg aaa aag tac aac agc tat gat cca aat cat ata	557
Thr Val Glu Val Leu Lys Lys Tyr Asn Ser Tyr Asp Pro Asn His Ile	
125 130 135	
cct gtc aaa gct aag gtt aat gtc act gtt aat tgt tct tgt ggg aac	605
Pro Val Lys Ala Lys Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn	
140 145 150 155	
agc cag att tca aaa gac tat ggg cta ttt atc acc tat cca ctt agg	653
Ser Gln Ile Ser Lys Asp Tyr Gly Leu Phe Ile Thr Tyr Pro Leu Arg	
160 165 170	
cct agg gat act ctt gag aag att gca aga cat tct aat ctt gat gaa	701
Pro Arg Asp Thr Leu Glu Lys Ile Ala Arg His Ser Asn Leu Asp Glu	
175 180 185	
gga gta ata caa agt tac aat ttg ggt gtc aat ttc agc aaa ggc agc	749
Gly Val Ile Gln Ser Tyr Asn Leu Gly Val Asn Phe Ser Lys Gly Ser	
190 195 200	
ggg gta gtg ttc ttt ccc gga aga gat aaa aat gga gaa tat gtt cct	797
Gly Val Val Phe Phe Pro Gly Arg Asp Lys Asn Gly Glu Tyr Val Pro	
205 210 215	
tta tat cct aga aca ggt ctt ggt aag ggt gca gct gct ggt ata tct	845
Leu Tyr Pro Arg Thr Gly Leu Gly Lys Gly Ala Ala Ala Gly Ile Ser	
220 225 230 235	
ata gct gga ata ttt gcg ctt ctg tta ttt gtt atc tgc ata tat atc	893
Ile Ala Gly Ile Phe Ala Leu Leu Leu Phe Val Ile Cys Ile Tyr Ile	
240 245 250	
aaa tac ttc caa aag aag gaa gaa gag aaa act aaa ctg cca caa gtt	941
Lys Tyr Phe Gln Lys Lys Glu Glu Glu Lys Thr Lys Leu Pro Gln Val	
255 260 265	

tct acg gcg ctt tca gct caa gat gcc tcg ggt agt gga gag tac gaa	989
Ser Thr Ala Leu Ser Ala Gln Asp Ala Ser Gly Ser Gly Glu Tyr Glu	
270 275 280	
act tcg gga tcc agt ggg cat ggt acc ggt agt act gct ggc ctt aca	1037
Thr Ser Gly Ser Ser Gly His Gly Thr Gly Ser Thr Ala Gly Leu Thr	
285 290 295	
gga att atg gtg gca aag tca act gag ttt tca tat caa gaa cta gcc	1085
Gly Ile Met Val Ala Lys Ser Thr Glu Phe Ser Tyr Gln Glu Leu Ala	
300 305 310 315	
aag gct aca aat aac ttc agc tta gat aat aaa att ggt caa ggt gga	1133
Lys Ala Thr Asn Asn Phe Ser Leu Asp Asn Lys Ile Gly Gln Gly Gly	
320 325 330	
ttt gga gct gtc tat tat gca gta ctc aga ggc gag aaa aca gca att	1181
Phe Gly Ala Val Tyr Tyr Ala Val Leu Arg Gly Glu Lys Thr Ala Ile	
335 340 345	
aag aag atg gat gta caa gcg tca aca gaa ttc ctt tgc gag ttg caa	1229
Lys Lys Met Asp Val Gln Ala Ser Thr Glu Phe Leu Cys Glu Leu Gln	
350 355 360	
gtc tta aca cat gtt cat cac ttg aat ctg gtg agg ttg att gga tat	1277
Val Leu Thr His Val His His Leu Asn Leu Val Arg Leu Ile Gly Tyr	
365 370 375	
tgt gtt gag gga tca ctt ttc ctt gta tat gaa cat att gac aat gga	1325
Cys Val Glu Gly Ser Leu Phe Leu Val Tyr Glu His Ile Asp Asn Gly	
380 385 390 395	
aac ttg ggt caa tat ttg cac ggt ata gat aaa gcg cca tta cca tgg	1373
Asn Leu Gly Gln Tyr Leu His Gly Ile Asp Lys Ala Pro Leu Pro Trp	
400 405 410	
tca agt agg gtg caa att gct cta gat tcc gca aga ggc ctt gaa tac	1421
Ser Ser Arg Val Gln Ile Ala Leu Asp Ser Ala Arg Gly Leu Glu Tyr	
415 420 425	
att cat gaa cac act gta cct gtg tat atc cat cgt gat gta aaa tca	1469
Ile His Glu His Thr Val Pro Val Tyr Ile His Arg Asp Val Lys Ser	
430 435 440	
gcg aat ata tta ata gac aaa aac ttg cac gga aag gtt gca gat ttt	1517
Ala Asn Ile Leu Ile Asp Lys Asn Leu His Gly Lys Val Ala Asp Phe	
445 450 455	
ggc ttg acc aaa ctt att gaa gtt gga aac tcc aca ctt cac act cgt	1565
Gly Leu Thr Lys Leu Ile Glu Val Gly Asn Ser Thr Leu His Thr Arg	
460 465 470 475	
cta gtg gga aca ttt gga tac atg cca cca gaa tat gct caa tat ggc	1613
Leu Val Gly Thr Phe Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly	
480 485 490	
gat gtt tct cca aaa ata gat gta tat gct ttt gga gtt gtt ctt tat	1661
Asp Val Ser Pro Lys Ile Asp Val Tyr Ala Phe Gly Val Val Leu Tyr	
495 500 505	

gag ctt att tct gca aag aat gct att ctg aag aca ggt gaa tct gct	1709
Glu Leu Ile Ser Ala Lys Asn Ala Ile Leu Lys Thr Gly Glu Ser Ala	
510 515 520	
gtc gaa tca aag ggt ctt gta gca ttg ttt gaa gaa gca ctt aat cag	1757
Val Glu Ser Lys Gly Leu Val Ala Leu Phe Glu Glu Ala Leu Asn Gln	
525 530 535	
atc gat cct tta gaa gct ctt cgc aaa ttg gtg gat cct agg ctt aaa	1805
Ile Asp Pro Leu Glu Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Lys	
540 545 550 555	
gaa aac tat cca att gat tct gtt tta aag atg gct caa ctt ggg aga	1853
Glu Asn Tyr Pro Ile Asp Ser Val Leu Lys Met Ala Gln Leu Gly Arg	
560 565 570	
gca tgt aca aga gac aat cca cta cta cgc cca agt atg aga tct tta	1901
Ala Cys Thr Arg Asp Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu	
575 580 585	
gtc gtt gct ctt atg aca ctc tta tca cat act gat gat gat gac act	1949
Val Val Ala Leu Met Thr Leu Leu Ser His Thr Asp Asp Asp Asp Thr	
590 595 600	
ttc tat gaa aat caa tct ctc aca aat cta tta tca gtg aga	1991
Phe Tyr Glu Asn Gln Ser Leu Thr Asn Leu Leu Ser Val Arg	
605 610 615	
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aatgttttga ctctgaacat aatattgagg ttaggaagtt ttgatcttgt gttcaaat	2111
tatttcccaa aatagtcaaa aagtcctaga tccaaagaag acatcctgta attattttta	2171
gtgacgctgt aacactaaag tacagtttat atataacatt ttaaaa	2217

<210> 54
 <211> 617
 <212> PRT
 <213> Pisum sativum

<400> 54

Met Lys Leu Lys Asn Gly Leu Leu Leu Phe Phe Met Phe Leu Asp Cys
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Ile Phe Phe Lys Val Glu Ser Lys Cys Val Ile Gly Cys Asp Ile Ala
20 25 30

Leu Ala Ser Tyr Tyr Val Met Pro Leu Val Gln Leu Ser Asn Ile Thr
35 40 45

Thr Phe Met Gln Ser Lys Leu Val Thr Asn Ser Phe Glu Val Ile Val
50 55 60

Arg Tyr Asn Arg Asp Ile Val Phe Ser Asn Asp Asn Leu Phe Ser Tyr
65 70 75 80

Phe Arg Val Asn Ile Pro Phe Pro Cys Glu Cys Ile Gly Gly Glu Phe
85 90 95

Leu Gly His Val Phe Glu Tyr Thr Ala Asn Glu Gly Asp Thr Tyr Asp
100 105 110

Leu Ile Ala Asn Thr Tyr Tyr Ala Ser Leu Thr Thr Val Glu Val Leu
115 120 125

Lys Lys Tyr Asn Ser Tyr Asp Pro Asn His Ile Pro Val Lys Ala Lys
130 135 140

Val Asn Val Thr Val Asn Cys Ser Cys Gly Asn Ser Gln Ile Ser Lys
145 150 155 160

Asp Tyr Gly Leu Phe Ile Thr Tyr Pro Leu Arg Pro Arg Asp Thr Leu
165 170 175

Glu Lys Ile Ala Arg His Ser Asn Leu Asp Glu Gly Val Ile Gln Ser
180 185 190

Tyr Asn Leu Gly Val Asn Phe Ser Lys Gly Ser Gly Val Val Phe Phe
195 200 205

Pro Gly Arg Asp Lys Asn Gly Glu Tyr Val Pro Leu Tyr Pro Arg Thr
210 215 220

Gly Leu Gly Lys Gly Ala Ala Ala Gly Ile Ser Ile Ala Gly Ile Phe
225 230 235 240

Ala Leu Leu Leu Phe Val Ile Cys Ile Tyr Ile Lys Tyr Phe Gln Lys
245 250 255

Lys Glu Glu Glu Lys Thr Lys Leu Pro Gln Val Ser Thr Ala Leu Ser
260 265 270

Ala Gln Asp Ala Ser Gly Ser Gly Glu Tyr Glu Thr Ser Gly Ser Ser
275 280 285

Gly His Gly Thr Gly Ser Thr Ala Gly Leu Thr Gly Ile Met Val Ala
290 295 300

Lys Ser Thr Glu Phe Ser Tyr Gln Glu Leu Ala Lys Ala Thr Asn Asn
 305 310 315 320

Phe Ser Leu Asp Asn Lys Ile Gly Gln Gly Gly Phe Gly Ala Val Tyr
 325 330 335

Tyr Ala Val Leu Arg Gly Glu Lys Thr Ala Ile Lys Lys Met Asp Val
 340 345 350

Gln Ala Ser Thr Glu Phe Leu Cys Glu Leu Gln Val Leu Thr His Val
 355 360 365

His His Leu Asn Leu Val Arg Leu Ile Gly Tyr Cys Val Glu Gly Ser
 370 375 380

Leu Phe Leu Val Tyr Glu His Ile Asp Asn Gly Asn Leu Gly Gln Tyr
 385 390 395 400

Leu His Gly Ile Asp Lys Ala Pro Leu Pro Trp Ser Ser Arg Val Gln
 405 410 415

Ile Ala Leu Asp Ser Ala Arg Gly Leu Glu Tyr Ile His Glu His Thr
 420 425 430

Val Pro Val Tyr Ile His Arg Asp Val Lys Ser Ala Asn Ile Leu Ile
 435 440 445

Asp Lys Asn Leu His Gly Lys Val Ala Asp Phe Gly Leu Thr Lys Leu
 450 455 460

Ile Glu Val Gly Asn Ser Thr Leu His Thr Arg Leu Val Gly Thr Phe
 465 470 475 480

Gly Tyr Met Pro Pro Glu Tyr Ala Gln Tyr Gly Asp Val Ser Pro Lys
 485 490 495

Ile Asp Val Tyr Ala Phe Gly Val Val Leu Tyr Glu Leu Ile Ser Ala
 500 505 510

Lys Asn Ala Ile Leu Lys Thr Gly Glu Ser Ala Val Glu Ser Lys Gly
 515 520 525

Leu Val Ala Leu Phe Glu Glu Ala Leu Asn Gln Ile Asp Pro Leu Glu
 530 535 540

Ala Leu Arg Lys Leu Val Asp Pro Arg Leu Lys Glu Asn Tyr Pro Ile
545 550 555 560

Asp Ser Val Leu Lys Met Ala Gln Leu Gly Arg Ala Cys Thr Arg Asp
565 570 575

Asn Pro Leu Leu Arg Pro Ser Met Arg Ser Leu Val Val Ala Leu Met
580 585 590

Thr Leu Leu Ser His Thr Asp Asp Asp Asp Thr Phe Tyr Glu Asn Gln
595 600 605

Ser Leu Thr Asn Leu Leu Ser Val Arg
610 615